

Fern, *Botrychium matricariaefolium* were found in the rocky woods adjoining.

After eating lunch at picnic tables maintained by the State the party explored the ravine of Spruce Brook, noting the Twisted Stalk, *Streptopus roseus* in fruit with bright scarlet berries and the Moose Wood, *Acer pennsylvanicum*. A little higher up a plant of Green Fringed Orchis *Habenaria lacera* was seen in flower. Near the top of the climb where the land was somewhat more level was a large stand of Whorled Pogonia, *Isotria verticillata*, some showing immature fruit. Still higher up the ladies discovered a quantity of blueberries which were enjoyed more for their flavor than for their botanical interest.

E. B. HARGER

PROCEEDINGS OF THE CLUB

MEETING OF APRIL 4, 1939

The meeting at the American Museum of Natural History was called to order by the President at 8.15 P.M.

Sixty-nine persons were present.

The following people were elected to associate membership: Miss Catherine Sheridan, 658 West 188th Street, New York; Miss Esther Barag, 2995 Marion Avenue, New York; Mr. Seymour Barrett, 1025 Gerard Avenue, New York; Miss Anna E. Lofgren, 575 West 172nd Street, New York; and Mrs. Edith J. Hastings, 2587 Sedgwick Avenue, New York.

The resignation of Dr. Gilbert L. Stout, Office of Plant Pathology, Department of Agriculture, Sacramento, Calif., from annual membership was accepted with regret.

The scientific program consisted of an illustrated lecture on Eucalyptus of California by Mr. George T. Hastings. The author's abstract follows:

"There are growing in California probably over two hundred species of Eucalyptus. Of these the most common is the blue gum, *Eucalyptus globulus*, which was introduced into the state in the late 1850s or early 1860s. It is also the most commonly grown eucalypt in other parts of the world where they have been introduced. The claims made twenty or thirty years ago that the growing of eucalypts would be a profitable business on dry land have not proved true, but as a shade and ornamental tree, for windbreaks in citrus groves and for the production of fire wood the trees are of great

value. As with most species of *Eucalyptus* the blue gum has two types of leaves, opposite, broad, bluish juvenile ones and alternate, narrow, yellowish-green ones on older trees. All of the eucalypts have flowers in which the sepals and petals are fused into a cap that covers the bud, falling as the flower opens. Stamens are usually numerous, over 1,100 in the blue gum and more numerous in some other species, but in a few kinds not over 20. The scarlet-flowered gum, *Eucalyptus ficifolia* is commonly planted as an ornamental shade tree—it is a small tree, the large panicles of brilliant flowers make it very beautiful. The manna gum, *Eucalyptus viminalis* is one of the large species, specimens over three hundred feet high have been reported from Australia (claims of trees 400 or more feet high have all been disproved) making it a rival of the Coast Redwoods as the tallest tree of the world. Of the over five hundred species of *Eucalyptus* growing in Australia, Tasmania and a few neighboring islands some are tall trees, others are little more than shrubs. One, the coral gum, *Eucalyptus torquata*, is said to flower when only a foot or two tall when grown in pots. A score of species are commonly grown in California, others are to be found as specimen trees on estates, or in large collections of the trees such as that at the Huntington Gardens in Pasadena. Possibly the most curious of them all is the bushy yate, *Eucalyptus Lehmanni*, in which the flowers are in compact clusters, the ovaries fused together and the caps making slender horns up to two inches long. In this species pollination often occurs before the caps fall, the latter being pushed off as the fruit begins to develop. One of the most beautiful species is a low form from Western Australia, *Eucalyptus erythrocorys*, in which the caps are brilliant scarlet above the green ovaries, the stamens are grouped in four clusters and are bright yellow. A few forms, such as *Eucalyptus pulverulenta*, have the adult leaves round and opposite. *E. pulverulenta* is a small tree, grown chiefly to furnish cut branches to use for decoration alone or with large masses of flowers.”

CLYDE CHANDLER

Recording Secretary

MEETING OF APRIL 21, 1939, AT COLUMBIA UNIVERSITY

The President, Arthur H. Graves, presided. There were seventy-four persons present. The scientific program consisted of a lecture on “Tissue Culture in Plants” by Dr. Philip R. White of the Rockefeller Institute for Medical Research at Princeton, N. J. The author’s abstract follows:

“The idea of cultivating isolated tissues and cells, as a means of studying the supposed ‘totipotency’ of the cell as an ‘elementary organism,’ first clearly formulated by Gottlieb Haberlandt in 1902, first successfully carried out with nerve cells by Ross Harrison in 1906, offered a potential means of answering many questions in plant and animal physiology. Irwin Smith, seeking to use such a method in studying crown gall tumors of plants was

balked by the lack of a satisfactory technique. Beginning in 1924, the speaker has studied this problem intensively and there has resulted the demonstrations, first that a differentiated plant organ, the root, could be grown in a normal condition for indefinite periods (1934), second, that this capacity is shared by roots of a great many, if not all, species of flowering plants (1938), third, that such organs can be so grown in a relatively simple nutrient, all of whose constituents are known and of high purity (1939), fourth, that relatively simple masses of undifferentiated callus tissue can likewise be grown for indefinite periods in this simple synthetic nutrient (1939) and, fifth, that these undifferentiated masses are actually 'totipotent' since they can be made to differentiate at will by subjecting them to relatively simple treatments (unpublished). A technique such as was visualized by Haberlandt and repeatedly sought since his day is thus now available. Some of the steps in the development of this technique were presented in detail and the implication of these steps were discussed briefly with illustrations to show the precision with which each factor can and must be controlled. Some applications of the method were outlined and future problems suggested."

CLYDE CHANDLER
Recording Secretary

MEETING OF MAY 2, 1939, AT THE AMERICAN MUSEUM OF
NATURAL HISTORY

The meeting was called to order by Mr. George T. Hastings at 8.15 P.M.. Forty-nine persons were present.

The following people were elected to membership in the Club: Annual—Mr. Lawrence O. Dohrmann, 25-47 38th Street, Long Island City, N. Y. Associate—Dr. Thelma G. Maginnis, 79 Washington Avenue, Arlington, N. J.; Miss Cecelia Fortmüller, 6217 Catalpa Avenue, Ridgewood, N. Y.; Mrs. Alfred B. Thacher, 486 Scotland Road, South Orange, N. J.; Mrs. Lillie Hellerman, 10 Westminster Road, Brooklyn, N. Y.; Mrs. Augusta Altschuler, 251 Herze Street, Brooklyn, N. Y.

The resignations of Dr. C. W. Argue, University of New Brunswick, Fredericton, N. B., Canada, from annual membership and Mr. Joseph Heikoff, 140 East 35th Street, Brooklyn, N. Y., from associate membership were reported.

No further business was transacted.

The scientific program consisted of the showing of colored slides, Kodochromes, and movies of "Travels in Inca Lands" by Dr. E. H. Fulling, editor of *Botanical Review*. The speaker's abstract follows:

"In 1912 Professor Hiram Bingham of Yale University, director of several expeditions under the auspices of Yale University and The National Geographic Society to study the old Inca civilization of Peru, discovered Macchu Pichu, the lost capitol of the Incas. It was a city of refuge built in the canyon of the Urubamba River, 2,000 feet above the stream with surrounding mountains that tower a mile high. This former capitol of white granite is now in ruins under encroaching tropical vegetation and is one of the great archeological sites of the Americas.

The most striking feature of the West Coast of South America is the extensive arid region which extends some 1,800 miles from Ecuador to the middle portion of Chile. The bleak barrenness of this area, destitute of any conspicuous vegetation extends inland to the high plateau of Bolivia and is watered only here and there by rivers, in the valleys of which there is natural vegetation and farming. The aridity of this region, where rain seldom falls, is a result of the cold Humboldt current which flows north along the coast and meets the warmer Japan current near the northern end of the barren coast. This cold current teems with fish which sustain the world's greatest flocks of birds, the cormorants, pelicans and others, which have built up the valuable guano deposits of the Peruvian coast.

South of Santiago there is sufficient rainfall to sustain farming and about 40° S. latitude forests of virgin timber are encountered about the beautiful Lake Region of Southern Chile."

CLYDE CHANDLER

Recording Secretary

MEETING OF MAY 17, 1939, AT THE NEW YORK BOTANICAL
GARDEN

The meeting was called to order by the President, Dr. Arthur H. Graves, at 3.15 P.M.

Twenty-two persons were present.

Minutes of the previous three meetings were approved as read.

Mr. Harry L. Weaver, Columbia University, New York City, and Dr. George B. Cummins, Agricultural Experiment Station, Lafayette, Ind., were elected to annual membership.

Mr. C. A. Butt, 11 Hawthorne Avenue, East Orange, N. J., and Mr. Louie C. Hardy, 6 Valley Street, Newark, N. J., were elected to associate membership.

The resignation from associate membership of Miss Gretchen D. Taylor, 59 Mercer Street, Somerville, N. J., was reported.

The President asked Dr. Harold N. Moldenke to serve on the membership committee.

The scientific program consisted of a talk by Dr. W. G. Whaley on "The Apical Meristem in Plant Development." The author's abstract follows:

"A study was made of the developmental behavior of the apical meristem in three species of *Lycopersicon*, *L. esculentum*, *L. racemigerum*, *L. pimpinellifolium*. A direct correlation was found between the size of the meristem at any given stage and the size of the determinate organs of the plant. Generally, the volume of the apical meristem increases as the plant grows. There is also a parallel increase in organ size. There is a progressive decrease in meristem cell size during development presumably because cell division takes place more rapidly than protoplasmic synthesis. This progressive decrease in cell size during development is attended by a similar decrease in nuclear size except that for a short time either during or immediately following germination there is an increase in nuclear volume. Both cells and nuclei reach a constant minimal volume when the plants begin to mature. It is suggested that this progressive decrease in cell and nuclear size at the meristem may be characteristic of indeterminate growth as opposed to determinate growth as in the development of fruit tissues where a progressive increase in cell size is the rule."

CLYDE CHANDLER
Recording Secretary

NEWS NOTES

Dr. LAETITIA M. SNOW, professor of botany at Wellesley College, retired from active service at the close of the last academic year with the title of professor emeritus. She will make her home in Pacific Grove, Calif., where she will continue her research at the Hopkins Marine Station of Stanford University.

JOHN H. LOVELL died at Sanford, Me., on August 2. He was seventy-eight years old. He had devoted many years to the study of the relation of northern plants to their environment, methods of pollination, relation of flower colors to insect visitors and other topics. He was the author of *The Flower and the Bee* and *The Honey Plants of North America*. Since 1926 he had contributed daily articles on New England plants to the *Boston Globe* and to other New England papers.

A NATURE ESSAY CONTEST

An essay contest, open to all nature lovers and offering cash prizes totaling \$225, is announced by Claremont Colleges, Claremont, Calif. Manuscripts should be of suitable length for magazine publication but should not exceed 3,000 words, and must reach the judges before February 1, 1940.

The contest, sponsoring officials state, is part of a project to foster interest in the study of nature and to encourage an appre-